

Applicant : Bennett et al.  
Serial No. : 09/975,196  
Filed : October 10, 2001  
Page : 2 of 6

Attorney's Docket No.: 05542-  
480001 / 4023/P1/PPC/CMP

## CLAIMS

1. (Previously Presented) A carrier head for chemical mechanical polishing, comprising:  
a base having at least a portion formed of a polymer;  
a mounting assembly connected to the base having a surface for contacting a substrate;  
a retainer secured to the portion of the base to prevent the substrate from moving along the surface; and  
a damping material secured between the retainer and the portion of the base to reduce the translation of vibrational energy between the retainer and the base.
2. (Original) The carrier head of claim 1, wherein the portion of the base is a ring-shaped body extended around a perimeter of the base.
3. Cancelled.
4. (Previously Presented) The carrier head of claim 2, wherein the ring-shaped body includes at least one boss extending to contact the retainer.
5. (Previously Presented) The carrier head of claim 4, further comprising at least one screw extending through apertures in the base, the ring-shaped body and the damping material and into a receiving recess in the retainer to secure the retainer to the base.
6. (Previously Presented) The carrier head of claim 5, wherein the at least one boss surrounds the at least one screw.
7. (Previously Presented) The carrier head of claim 1, wherein the polymer includes polyphenylenesulfide, carbon fibers and polytetrafluoroethylene.

Applicant : Bennett et al.  
Serial No. : 09/975,196  
Filed : October 10, 2001  
Page : 3 of 6

Attorney's Docket No.: 05542-  
480001 / 4023/P1/PPC/CMP

8. (Original) The carrier head of claim 7, wherein the polymer includes about 50-55% polyphenylenesulfide, 30-35% carbon fibers, and about 10-15% polytetrafluoroethylene.
9. (Previously Presented) The carrier head of claim 7, wherein the damping material includes a polyvinylchloride thermoplastic.
10. (Previously Presented) The carrier head of claim 2, wherein the polymer includes polyphenylenesulfide, carbon fibers and polytetrafluoroethylene.
11. (Original) The carrier head of claim 1, wherein the entire base is formed from the polymer.
12. Cancelled.
13. (Previously Presented) The carrier head of claim 1, wherein a bottom portion of the retainer includes at least one of carbon, fluoropolymer, or polyester.
14. (Previously Presented) A carrier head for chemical mechanical polishing, comprising:
  - a base;
  - a mounting assembly attached to the base having a surface for contacting a substrate;
  - a retainer secured to the base to prevent the substrate from moving along the surface; and
  - a damping material secured between the retainer and the base to reduce the translation of vibrational energy between the retainer and the base.
15. (Previously Presented) The carrier head of claim 14, wherein the damping material includes at least one of polyurethane or polyvinylchloride thermoplastic.

Applicant : Bennett et al.  
Serial No. : 09/975,196  
Filed : October 10, 2001  
Page : 4 of 6

Attorney's Docket No.: 05542-  
480001 / 4023/P1/PPC/CMP

16. (Original) The carrier head of claim 14, wherein the base has at least a portion formed of a polymer and the retainer is secured to the portion of the base.
17. (Original) The carrier head of claim 16, wherein the portion of the base is a ring-shaped body extended around a perimeter of the base.
18. (Previously Presented) The carrier head of claim 17, further comprising at least one screw extending through apertures in the base, the ring-shaped body and the damping material and into a receiving recess in the retainer to secure the retainer to the base.
19. (Previously Presented) The carrier head of claim 17, wherein the ring-shaped body includes at least one boss surrounding the screw and extending to contact the retainer.
20. (Previously Presented) The carrier head of claim 14, wherein a bottom portion of the retainer includes at least one of carbon, fluoropolymer, or polyester.
21. (Previously Presented) A carrier head for chemical mechanical polishing, comprising:  
a base;  
a mounting assembly attached to the base having a surface for contacting a substrate; and  
a retainer secured to the base to prevent the substrate from moving along the surface, at least a bottom portion of the retainer including a material selected from the group consisting of perfluoroalkoxy, polyetherketoneketone, polybenzimidazole, an imidized thermoset polyimide, a semi-crystalline thermoplastic polyester, and a long molecular chain molecule produced from poly-paraphenylene terephthalamide.
22. (Previously Presented) The carrier head of claim 21, wherein the bottom portion of the retainer further includes carbon.

Applicant : Bennett et al.  
Serial No. : 09/975,196  
Filed : October 10, 2001  
Page : 5 of 6

Attorney's Docket No.: 05542-  
480001 / 4023/P1/PPC/CMP

23. (Withdrawn) The carrier head of claim 22, wherein the bottom portion of the retainer further includes graphite.

24. (Previously Presented) The carrier head of claim 22, wherein the bottom portion of the retainer further includes carbon fibers.

Claims 25-28. Cancelled.

29. (Previously Presented) A retaining ring for a chemical mechanical polishing head, comprising:

an upper portion configured to be secured to a base;

a bottom portion that includes a material selected from the group consisting of perfluoroalkoxy, polyetherketoneketone, polybenzimidazole, a semi-crystalline thermoplastic polyester, and a long molecular chain molecule produced from poly-paraphenylene terephthalamide.

30. (Previously Presented) The retaining ring of claim 29, wherein the bottom portion of the retaining ring further includes at least one of graphite or carbon fibers.

31. (Withdrawn) The carrier head of claim 21, wherein at least a bottom portion of the retainer includes perfluoroalkoxy.

32. (Withdrawn) The carrier head of claim 21, wherein at least a bottom portion of the retainer includes polyetherketoneketone.

33. (Withdrawn) The carrier head of claim 21, wherein at least a bottom portion of the retainer includes polybenzimidazole.

Applicant : Bennett et al.  
Serial No. : 09/975,196  
Filed : October 10, 2001  
Page : 6 of 6

Attorney's Docker No.: 05542-  
480001 / 4023/P1/PPC/CMP

34. (Previously Presented) The carrier head of claim 21, wherein at least a bottom portion of the retainer includes a semi-crystalline thermoplastic polyester.
35. (Withdrawn) The carrier head of claim 21, wherein at least a bottom portion of the retainer includes a long molecular chain molecule produced from poly-paraphenylene terephthalamide.
36. (Withdrawn) The carrier head of claim 21, wherein at least a bottom portion of the retainer includes an imidized thermoset polyimide.
37. (Withdrawn) The retaining ring of claim 29, wherein the bottom portion includes perfluoroalkoxy.
38. (Withdrawn) The retaining ring of claim 29, wherein the bottom portion includes polyetherketoneketone.
39. (Withdrawn) The retaining ring of claim 29, wherein the bottom portion includes polybenzimidazole.
40. (Previously Presented) The retaining ring of claim 29, wherein the bottom portion includes a semi-crystalline thermoplastic polyester.
41. (Withdrawn) The retaining ring of claim 29, wherein the bottom portion includes a long molecular chain molecule produced from poly-paraphenylene terephthalamide.